REMARKS

The Official Action mailed July 30, 2002 has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time.

Applicants note with appreciation the consideration of the Information Disclosure Statements filed on January 14, 1999; November 26, 1999; July 18, 2000; January 31, 2001; April 9, 2001 and May 31, 2002.

Claims 1-130 are pending in the present application, of which claims 1, 7, 13, 19, 25 and 56-65 are independent. Applicants note with appreciation the allowance of claims 1-55. Applicants also appreciate the indication that claims 57, 59-60, 62, 64-65, 67, 69-70, 72, 74-75, 77, 79-80, 82, 84-85, 87, 89-90, 92, 94-95, 97, 99-100, 102- 104-105, 107, 109-110, 112, 114-115, 117, 119-120, 122, 124-125, 127 and 129-130 are allowable over JP 01-156725 and U.S. Patent 5,055,899 to Wakai et al. Claims 56-65 remain the sole rejected independent claims. For the reasons set forth in detail below, these claims are believed to be in condition for allowance.

Applicant appreciates the Examiner's time in conducting a personal interview on October 8, 2002. During the interview, the amendments to independent claims 56-65 submitted herewith were discussed. It was understood that these amendments are sufficient to overcome the outstanding rejections under 35 U.S.C. 112. Furthermore, the amendments remove reference to the term "conformal" and include what is understood to be allowable subject matter recited in independent claims 57, 59-60, 62 and 64-65. All claims are now believed to be in condition for allowance as described below and favorable reconsideration is requested.

The Official Action first objects to the specification as failing to provide proper antecedent basis for the claimed subject matter. Specifically, the Official Action asserts that the recitation of a surface of the pixel electrode being conformal to a rounded edge of the leveling film in claims 56, 58, 61 and 63 is not disclosed in the specification. In response, claims 56, 58, 61 and 63 have been amended to remove this limitation and thus this rejection is moot. Favorable reconsideration is requested.

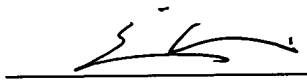
The Official Action next rejects claims 57, 59, 60, 62, 64-65, 67, 69-70, 72, 74-75, 77, 79-80, 82, 84-85, 87, 89-90, 92, 94-95, 97, 99-100, 102, 104-105, 107, 109-110, 112, 114-

115, 117, 119-120, 122, 124-125, 127 and 129-130 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Official Action asserts that the recitation of an (additional) insulating film comprising an inorganic material formed over the semiconductor film is confusing since the specification discloses only one gate insulating film. In response, as discussed during the interview, claims 56-65 have been amended herewith to recite that the insulating film comprising an inorganic material is formed over the gate electrode to clarify the present invention. As understood during the interview, these amendments are believed to be sufficient to overcome the rejection under 35 U.S.C. 112 and favorable reconsideration is requested.

The Official Action next rejects claims 56, 58, 61, 63, 66, 68, 71, 73, 76, 78, 81, 83, 86, 88, 91, 93, 96, 98, 101, 103, 106, 108, 111, 113, 116, 118, 121, 123, 126 and 128 as obvious based on the combination of JP 01-156175 and U.S. Patent 5,055,899 to Wakai et al. In response, independent claims 56, 58, 61 and 63 have been amended herewith to recite what is understood to be allowable subject matter. Specifically, these claims have been amended to recite a gate insulting film and an additional insulating film comprising an inorganic material formed over the gate electrode. It is understood that these features are allowable based on the comments on the bottom of page 4 of the Official Action and favorable reconsideration is requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 56-65 as follows:

New issue

56. (Amended) A display device comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said [semiconductor film] gate electrode;

a first contact hole in said insulating film;

a wiring formed on said insulating film and electrically connected to said semiconductor film through said first contact hole formed in said insulating film;

a leveling film comprising an organic resin to provide a leveled upper surface over said [semiconductor] insulating film;

a second contact hole through said leveling film and said insulating film; and

[a leveling film comprising an organic resin to provide a leveled upper surface over said semiconductor film;

a second contact hole through said leveling film and said insulating film and]

a pixel electrode formed over said leveled upper surface and directly connected to said semiconductor film through said second contact hole,

wherein an edge of said leveling film at a periphery of said second contact hole is rounded[,

wherein a surface of said pixel electrode is conformal to the rounded edge of said leveling film at said second contact hole].

57. (Amended) A display device comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said [semiconductor film] gate electrode;

a wiring formed on said insulating film and electrically connected to said semiconductor film through a contact hole formed in said insulating film;

a leveling film comprising an organic resin provided over said semiconductor film, said insulating film and said wiring;

an opening through said leveling film and said insulating film; and

a pixel electrode formed over said leveling film and directly connected to said semiconductor film through said opening,

wherein a diameter of said opening is larger at an uppermost surface of said leveling film than at a lowermost surface thereof.

58. (Amended) A display device comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film over said [semiconductor film] gate electrode, said insulating film comprising an inorganic material;

a leveling film comprising an organic resin formed over said insulating film; and

a pixel electrode formed over said leveling film and directly connected to said semiconductor film through an opening provided in said leveling film,

wherein an edge of said organic resin film at a periphery of said opening is rounded[,

wherein a surface of said pixel electrode is conformal to the rounded edge of said leveling film at said opening].

59. (Amended) A display device comprising:

a plurality of thin film transistors formed over a substrate, each of said thin film transistors comprising at least a semiconductor film and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film formed over said [semiconductor film] gate electrode, said insulating film comprising an inorganic material;

a first opening formed in said insulating film over said semiconductor film;

a leveling layer formed over said insulating film to provide a leveled upper surface, wherein said leveling layer comprises an organic resin and is prevented from directly contacting said semiconductor film by said insulating film;

a second opening through said leveling layer and said insulating film over said semiconductor film; and

a pixel electrode formed over said leveled upper surface, said pixel electrode being directly connected to said semiconductor film through said second opening.

60. (Amended) A display device comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said [semiconductor film] gate electrode;

a first contact hole formed in said insulating film;

a wiring formed on said insulating film and electrically connected to said semiconductor film through said first contact hole formed in said insulating film;

a leveling film comprising an organic resin to provide a leveled upper surface over said [semiconductor] insulating film;

a second contact hole through said leveling film and said insulating film; and

a pixel electrode formed over said leveled upper surface and directly contacting said semiconductor film through said second contact hole.

61. (Amended) A television having a display unit and a tuner for receiving television radio wave, said display unit comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate

electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said [semiconductor film] gate electrode;

a first contact hole in said insulating film;

a wiring formed on said insulating film and electrically connected to said semiconductor film through said first contact hole formed in said insulating film;

a leveling film comprising an organic resin to provide a leveled upper surface over said [semiconductor] insulating film;

a second contact hole through said leveling film and said insulating film; and

a pixel electrode formed over said leveled upper surface and directly connected to said semiconductor film through said second contact hole,

wherein an edge of said leveling film at a periphery of said second contact hole is rounded. [rounded

wherein a surface of said pixel electrode is conformal to the rounded edge of said leveling film at said second contact hole]

62. (Amended) A television having a display unit and a tuner for receiving television radio wave, said display unit comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said [semiconductor film] gate electrode;

a wiring formed on said insulating film and electrically connected to said semiconductor film through a contact hole formed in said insulating film;

a leveling film comprising an organic resin provided over said semiconductor film, said insulating film and said wiring;

an opening through said leveling film and said insulating film; and

a pixel electrode formed over said leveling film and directly connected to said semiconductor film through said opening,

wherein a diameter of said opening is larger at an uppermost surface of said leveling film than at a lowermost surface thereof.

63. (Amended) A television having a display unit and a tuner for receiving television radio wave, said display unit comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film over said [semiconductor film] gate electrode, said insulating film comprising an inorganic material;

a leveling film comprising an organic resin formed over said insulating film; and

a pixel electrode formed over said leveling film and directly connected to said semiconductor film through an opening provided in said leveling film,

wherein an edge of said organic resin film at a periphery of said opening is rounded. [rounded,

wherein a surface of said pixel electrode is conformal to the rounded edge of said leveling film at said opening]

64. (Amended) A television having a display unit and a tuner for receiving television radio wave, said display unit comprising:

a plurality of thin film transistors formed over a substrate, each of said thin film transistors comprising at least a semiconductor film and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film formed over said [semiconductor film] gate electrode, said insulating film comprising an inorganic material;

a first opening formed in said insulating film over said semiconductor film;

a leveling layer formed over said insulating film to provide a leveled upper surface, wherein said leveling layer comprises an organic resin and is prevented from directly contacting said semiconductor film by said insulating film;

a second opening through said leveling layer and said insulating film over said semiconductor film; and

a pixel electrode formed over said leveled upper surface, said pixel electrode being directly connected to said semiconductor film through said second opening.

65. (Amended) A television having a display unit and a tuner for receiving television radio wave, said display unit comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said [semiconductor film] gate electrode;

a first contact hole formed in said insulating film;

a wiring formed on said insulating film and electrically connected to said semiconductor film through said first contact hole formed in said insulating film;

a leveling film comprising an organic resin to provide a leveled upper surface over said [semiconductor] insulating film;

a second opening through said leveling film and said insulating film; and

a pixel electrode formed over said leveled upper surface and directly contacting said semiconductor film through said second opening.